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This study sought to find any difference between students' GPA at College of San Mateo and at 4-year institutions, to identify different characteristics among transfers and their relationship to academic performance, and to assess any relation between performance at a 4-year institution and choice of major in junior college. First-time transfers to California University (1966-67) and to the state colleges (1967-68) were examined. Tables show various correlations of the data for transfers to the University. It was concluded that GPA's after transfer were a little higher than in the past, no way was known to reduce withdrawals, junior college corrects certain lacks and permits transfer, some majors show higher GPA's than others, college and university GPA's are similar and related, transfers generally pursue the same or similar major as at college. Teachers of subjects producing consistently lower GPA's could modify their content or teaching technique. As for the transfers to the state colleges, fewer than half would have been admitted from high school, but San Mateo was able to correct their deficiencies. They have about the same GPA at the state and the junior college, motivation was the characteristic most closely related to success, proximity and specialized majors most influence selection of a state college, transfer students are highly mobile, the number of units (excessive or insufficient) should be examined, most transfers take the same or similar majors, performance in several subjects, especially English, should be improved. (HH)

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COLLEGE OF SAN MATEO

RESEARCH REPORT

1968-6

ACADEMIC PERFORMANCE OF COLLEGE OF SAN MATEO TRANSFER STUDENTS AT THE UNIVERSITY OF CALIFORNIA AND STATE COLLEGES

JC 680 444

UNIVERSITY OF CALIF.
LOS ANGELES

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FRANK C. PEARCE, HEAD

Lachlan Throndson

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ACADEMIC PERFORMANCE OF COLLEGE OF SAN MATEO TRANSFER STUDENTS AT THE UNIVERSITY OF CALIFORNIA AND STATE COLLEGES

INTRODUCTION

Among the several functions of a junior college is that of preparing students for successful academic performance while attending the four-year institution of their choice. By accepting the upper 100 percent of all high school graduates, the ability of the California junior college to effectively perform this function is certainly challenged. However, based upon past performance, it can be expected that College of San Mateo students will drop only about one-half a grade point when they transfer to a state college or university. It was not expected that this study would provide findings that differed significantly. Instead, this study was designed to take the next step by refining the overall performance indicated by the student's grade point average to include performance in specific transfer curricula as it related to performance in the junior college curricula.

STUDY PURPOSE

To assess the effectiveness of the educational experience at the College of San Mateo in preparing students for satisfactory academic performance at four-year institutions.

OBJECTIVES

1. To determine the difference, if any, between the students' grade point averages at the College of San Mateo and their averages at four-year institutions.

2. To identify differences, in terms of selected characteristics, among students who transfer; and what relationship, if any, there is between these differences and the students' performance.

3. To assess the relationship, if any, between the performance of students in their classes at the transfer institution and their major field of study at the College of San Mateo.

PROCEDURE

Students included in this study have been grouped according to the general type of institution to which they transferred. Transfers to the University of California included only the first-time transfers during 1966-67 and not students who were in attendance during prior semesters. Their performance in classes during the entire first year of attendance was examined. However, the state colleges do not maintain a uniform reporting procedure and these students were studied separately. Moreover, the state college data were generally based on the 1967-68 school year, and the students' performance during both semesters was examined.

FINDINGS - PART I

University of California

During 1966-67 there were 126 former College of San Mateo students who transferred to campuses of the University of California. Unfortunately, the university has elected to eliminate that portion of its reporting procedure which provided a comparison with other junior colleges. Table I, however, summarizes some aspects of the students' performance in comparison with the performance of College of San Mateo students in prior years. It was noted that the proportion of students earning less than a "C" average had declined, the grade point differential had declined, but the junior college grade point average remained constant. In effect, transfer students exhibited about the same achievement in junior college as they had in the past, but their performance at the university was somewhat improved. This information prompted the question: "If transfer students are generally doing better at the university, why isn't the grade point average at College of San Mateo also higher?"

TABLE I - ACADEMIC ACHIEVEMENT
OF FIRST SEMESTER TRANSFER STUDENTS 1963-67

	1966-67	1965-66	1964-65	1963-64
Number of Completed Semesters	121	109	87	63
Percent Below "C" Average	12%	22%	28%	21%
Percent "B" Average or Better	18%	15%	18%	22%
Junior College Grade Point Average	2.83	2.87	2.81	2.92
University Grade Point Average	2.51	2.36	2.32	2.42
Grade Point Difference	-.32	-.51	-.49	-.50

These findings should be viewed within the context that none of the nine students from Santa Cruz were included (pass-fail grading is used). Since the total number of university transfers was relatively small, the inclusion of these students in the grade point average caluclations could raise or lower the overall G.P.A. by several tenths. On the other hand, the overall G.P.A. could be raised several tenths by averaging the grades of transfer students over the whole year since students tend to do better after the first year. Moreover, if those students who would do poorly or those who would do very well were to withdraw (eleven of the original 126 - nine percent - withdrew the first term, and twelve more, or a total of 18 percent, withdrew before the end of the second semester), the overall G.P.A. would be raised or lowered accordingly. The point here is that the difference found in the grade point averages may have been more apparent than real.

The relationship between grade point averages at the university and the College of San Mateo has been generally described. However, Table II provides a more direct comparison. It was noted that 54 percent of the students

TABLE II - A COMPARISON OF JUNIOR COLLEGE AND UNIVERSITY GRADE POINT AVERAGES

	Junior College G.P.A.							
	2.0 to 2.3		2.4 to 2.7		2.8 to 3.2		3.3 to 4.0	
University G.P.A.	#	%	#	%	#	%	#	%
Under 2.0	5	45.4	11	21.6	3	7.9	2	12.5
2.0 to 2.3	3	27.3	20	39.2	10	26.3	2	12.5
2.4 to 2.7	-	-	14	27.4	10	26.3	5	31.2
2.8 to 3.2	3	27.3	5	9.8	12	31.6	4	25.0
3.3 to 4.0	-	-	1	2.0	3	7.9	3	18.8
Total	11	100	51	100	38	100	16	100

who earned a G.P.A. of 2.0 to 2.3 in junior college earned the same or better at the university, as did 40 percent of the students with a G.P.A. of 2.4 to

to 2.7 in junior college, 40 percent of the students with a grade point average of 2.8 to 3.2 in junior college; while only 19 percent of the students with a grade point average of 3.3 or better in junior college were able to maintain that average at the university. At the same time, students with a grade point average of 2.4 or above in junior college were the most likely to maintain a "C" average or better at the university during their first year of attendance. Transfer students from the College of San Mateo achieved approximately the same grade point average at each of the campuses of the university. A related point noted was that 44 percent of the transfer students were eligible for admission to the university when they enrolled at College of San Mateo, 47 percent became eligible while attending CSM, and 9 percent were admitted to the university by special action.

DIFFERENCES AMONG STUDENTS WHO TRANSFERRED TO THE UNIVERSITY

The second objective of this study was to determine the differences, if any, among students who transferred to the university. For example, approximately 40 percent of the students transferring to each campus of the university were females. Exceptions included the University of California, Los Angeles, where 77 percent of the transfers were males and Santa Barbara where all three students were females. It was also noted that males tended to persist somewhat better in that 86 percent of the men completed three terms as compared to 74 percent of the women. Differences in university grade point averages held no practical meaning since the average for men was 2.38, and the average for women was 2.47.

There were no marked differences in the grade point averages of students at the university based on the major selected in junior college. That is, students majoring in Liberal Arts, Pre-medical or Mathematics, etc., in junior college all maintained the same approximate grade point average at the university. On the other hand, students selecting some majors at the university had better junior college grade point averages than students who selected other majors. For example, students who majored in Chemistry,

English, Mathematics, and Philosophy at the university maintained a 3.0 or better grade point average in junior college. Conversely, students majoring in Drama, Economics, Industrial Arts, Natural Resources, and Physical Education at the university had the lowest grade point averages at College of San Mateo. The possibility that students with the higher grade point averages had chosen to transfer to a particular campus of the university was also examined. In general, there were no differences noted in the grade point averages, except at Santa Cruz; that is, students who transferred to each campus had an average grade point average at CSM of 2.6 to 2.7, while those who transferred to Santa Cruz had an average of 3.1 GPA.

The study included data on whether or not former students stayed all three terms at the university during 1966-67. Eighty-two percent completed three terms, nine percent completed two terms, and nine percent completed one term only. There were no differences, however, in the three groups in terms of grade point averages at College of San Mateo. Specifically, those completing one term only had a GPA of 2.85 at CSM (N = 11), and those completing all three terms had a GPA of 2.76 at CSM (N = 103). A second factor considered was the College of San Mateo grade point average of students who were or were not eligible for the university when they entered junior college. It was found that those eligible to transfer to the university had earned a junior college GPA of 2.81, those who were not eligible earned a GPA of 2.71, and those admitted to the university by special action had a GPA of 2.61 at College of San Mateo. Essentially, these differences were of no practical significance. It was also noted that the students who were considered eligible for entrance at the university and those who were not eligible had approximately the same university grade point average (2.6 and 2.5), but those admitted by special action had a grade point average of 2.1 at the university.

A similar question considered was: "Did the university grade point averages of students who had attended a college other than College of San Mateo prior to transferring have a different GPA than those who had attended College of San Mateo only?"

There were 25 students who had attended both CSM and other colleges with a grade point average at the transfer college of 2.44, and 88 students who attended CSM alone had grade point averages of 2.41. It was also noted that both groups maintained approximately the same grade point average at the College of San Mateo. In effect, the ramifications of attending a college other than CSM were not reflected in the students' college or university grade point average.

Along these lines an examination was made of the number of units a student had completed at College of San Mateo. Generally, students transferred with about 60 units or junior standing. Exceptions were Riverside transfers with an average of 26 units completed at College of San Mateo, and transfers to University of California, Los Angeles, with 76 units completed at College of San Mateo. The amount of units a student had completed at College of San Mateo was not related to how many terms he completed at the university, but it was found that students who were not eligible for admission were the most likely to complete over 60 units in junior college. However, the number of units a student completed in junior college did not influence his university grade point average. Specifically, students transferring with 30 units had a GPA of 2.34 at the university, while those transferring with 60 units earned a GPA of 2.40 at the university. An interesting point was noted although it is considered parenthetical information: 86 transfer students (76 percent) entered the university immediately after leaving College of San Mateo, 13 students (10 percent) had waited a term, and 25 (20 percent) had waited two terms, and one student had enrolled after a wait of two years.

PERFORMANCE OF STUDENTS AT THE UNIVERSITY WITH SELECTED MAJORS AT COLLEGE OF SAN MATEO

A major concern of this study was the performance of students at the university with selected majors at the College of San Mateo. As a frame of reference for this examination, the majors of students at CSM and their subsequent majors at the university were compared. Table III shows that two

out of five students pursued the same or a very similar major at the university as that chosen in the junior college, while one out of five had not

TABLE III - COMPARISON OF JUNIOR COLLEGE AND UNIVERSITY MAJORS

UNIVERSITY MAJOR	Total	Major Field at College of San Mateo: Bus.	Engr.	Fine Arts	Lang. Arts	Lib. Arts	Life Sci.	Math	Phy. Sci.	Pre-Med	Soc. Sci.	Unclassified
Art	3			1							1	1
Biological Sciences	8		1				1	2		1	3	
Business	6		1			1						4
Chemistry	8		2			1			2	1	1	1
Economics	3										2	1
Engineering	7		5					1				1
English	7			2	2	3						
Foreign Languages	14		1		4					2	3	4
History	7	1				2					2	2
Industrial Arts	2		2									
Mathematics	3							2				1
Philosophy	2					1					1	
Physical Science	14	1	2			1	1	1	1	2	1	4
Political Science	9				1	2	1			1	4	
Psychology	4					2				1		1
Pre-Professional	2									1		1
Social Science	27		2	2	1	3	2			2	11	4
TOTAL	126	2	16	5	8	16	5	6	3	11	29	25

selected a major in junior college. Students who majored in Engineering or the pre-professional fields in junior college were the least likely to pursue the same major at the university.

Table III also shows that majors in the Social Sciences, Physical Sciences, and Foreign Languages at the university attracted the largest number of students. At the same time, majors predominating at the College of San Mateo included the Social Sciences, undeclared majors, Liberal Arts, and Engineering.

Students who attended the Berkeley campus seemed to prefer majors in the Social Sciences and Foreign Languages; Davis transfers preferred the Physical Sciences, Biological Science, and Chemistry; Riverside students preferred majors in Political Science, Santa Barbara transfers preferred Political Science and History majors; UCLA transfers preferred Political Science, and Santa Cruz transfers tended to choose History as a major. At all campuses except Davis it was found that the majors in the Social Science area tended to predominate. The university grade point average of students in the various majors was very similar except in Social Science, which was a few tenths of a grade point lower.

The final question assessed in the university portion of this study was: "How did students perform in classes at the university that were related to their major at junior college?" It is not implied that a student took classes in his delcared major only while attending junior college, but it is assumed that a Mathematics major in junior college took more Math courses, Physics courses, etc., than an Art major would have taken in junior college. Thus, it was of interest to know how a student performed in Math classes at the university when, for example, he majored in Physical Science at College of San Mateo. It should also be noted that many of the grade point averages reported in the university portion of the findings (Table IV) may not adequately represent the transfer population since a total of 126 students were involved. Thus, a grade point average of 2.5 may represent two grades in a course or twenty grades in a course.

Generally, Table IV shows that College of San Mateo Fine Arts majors maintained a "B" average in Fine Arts at the university and performed poorly in Mathematics, Chemistry, and French. College of San Mateo Business majors did very well in Art and Physical Education but rather poorly in their other classes.

TABLE IV - PERFORMANCE IN SUBJECT AREAS AT TRANSFER COLLEGE BASED ON DECLARED MAJOR IN JUNIOR COLLEGE

SUBJECTS TAKEN AT TRANSFER COLLEGE	Declared Major at College of San Mateo: Grade Point Average in Subject at Transfer College													
	Fine Arts	Business	English	Foreign Language	Pre-Law	Pre-Medical	Liberal Arts	Life Science	Engineering	Mathematics	Physical Science	Social Science	Vocational-Tech.	UNDECLARED MAJOR
Art	3.1	3.5	3.5	-	-	-	2.4	2.0	2.6	-	-	2.5	3.5	2.6
Biological Science	2.0	-	2.7	-	-	1.8	3.5	3.5	2.6	2.3	-	2.7	-	2.4
Business	-	-	3.5	-	-	-	-	-	2.1	-	3.1	-	-	2.5
Chemistry	1.3	-	2.0	-	-	1.8	2.4	2.4	3.4	-	2.4	1.9	2.0	2.5
Drama & Speech	2.8	-	3.5	-	-	3.0	2.8	2.0	-	-	3.0	3.5	-	-
Economics	3.5	-	2.6	-	-	2.6	3.5	2.0	2.5	2.0	-	2.6	-	2.8
Education	-	1.0	-	-	-	-	3.5	-	2.0	-	-	2.7	3.5	-
Engineering	-	-	-	-	-	-	-	3.5	3.0	3.5	-	-	-	1.8
English	3.5	-	2.6	-	2.0	3.5	2.7	3.5	3.3	-	-	2.3	2.0	2.8
French	1.5	-	2.8	3.5	-	2.0	3.5	1.3	2.8	-	-	2.0	2.8	2.7
German	-	-	2.0	3.5	-	1.0	2.5	2.6	1.0	2.2	-	3.0	-	1.7
Spanish	-	-	1.3	-	-	3.5	2.0	3.5	3.5	-	-	1.6	-	2.5
Other Language	-	-	3.5	-	-	2.0	2.0	-	-	-	2.0	1.8	-	-
History	-	1.3	2.9	-	2.8	2.8	2.6	2.6	2.4	-	-	2.5	-	3.1
Industrial Arts	-	-	-	-	-	-	-	-	2.8	-	-	-	-	-
Journalism	-	-	-	-	-	-	3.5	-	-	-	3.5	-	-	-
Mathematics	1.0	2.0	3.5	-	-	1.8	3.5	3.5	1.9	2.3	2.7	2.3	-	2.3
Music	3.5	-	-	-	-	1.8	-	-	2.0	3.5	2.0	3.1	-	2.0
Philosophy	2.0	-	-	-	2.8	2.0	2.0	1.0	-	2.9	-	2.3	-	2.2
Physical Education	-	3.5	3.5	-	-	3.5	3.3	3.5	2.8	3.5	3.5	3.3	-	2.4
Physical Science	3.5	2.0	2.0	-	-	1.9	1.3	2.3	2.4	3.1	2.5	2.0	-	2.4
Political Science	-	-	2.8	-	3.1	2.8	3.0	3.1	2.0	3.5	-	2.8	-	2.5
Psychology	3.5	-	1.6	-	2.0	1.6	2.8	2.8	-	-	-	2.2	2.0	1.7
Social Science	3.1	2.0	3.5	-	3.0	2.6	2.3	1.0	3.1	2.6	-	2.6	-	2.5

The performance of English majors varied considerably from class to class, including poor grades in Spanish, Psychology, "C-plus" grades in English, to a 3.5 GPA in Drama and Speech. Foreign Language majors did very well in French and German at the university, while pre-Law majors did very well in Political Science. Pre-Medical majors exhibited a varied performance, doing poorly in German, Psychology, Business, Chemistry, Mathematics, Music, and Physical Science.

Liberal Arts majors at College of San Mateo were fairly consistent in all classes except for their poor performance in Physical Science. Life Science majors did very well in the Biological Sciences at the university, earned one grade point less in the Physical Sciences, and performed quite poorly in the Social Sciences, Philosophy, and French. Engineering majors exhibited an average performance in most classes, doing quite well in Spanish, Chemistry, Social Science, but they performed poorly in German and Mathematics. Math majors did quite well in Engineering and Physical Science classes but earned average ratings in Mathematics classes. Physical Science majors performed best in classes that seemed to be somewhat unrelated to their majors. The performance of Social Science majors also varied considerably with particularly poor grades earned in Spanish and Chemistry. It was also noted that transfer students with an undeclared major at College of San Mateo performed poorly in Psychology, German, and Engineering.

Many students, with the exception of College of San Mateo Life Science majors, did poorly in the Biological Sciences. Very few students took Business classes at the transfer college. Chemistry was a subject in which most students performed poorly, although CSM Engineering majors did very well in that subject. All except those students with a Life Science major at College of San Mateo did well in Drama and Speech, and the Life Science and Math majors at CSM did not do very well in Economics at the transfer college. Few students took Education classes at the university. The students who took Engineering classes did very well at the transfer college except those who had undeclared majors at College of San Mateo. Those students having the most difficulty in English classes included CSM majors in Pre-Law, Vocational-Technical, and Social Science. Foreign Language

classes were a problem for many students except those who majored in Foreign Languages at College of San Mateo. Those who majored in English or Liberal Arts at CSM received good grades in French; and Life Science and Engineering majors performed well in Spanish, and Social Science majors who took German classes earned good grades at the university.

Mathematics classes at the university were a problem for most students. Notable exceptions were the students who had majored in English, Liberal Arts, Life Science, and Physical Science. Philosophy also seemed to be a difficult subject, while everyone did quite well in Physical Education classes. The Physical Science classes were a problem for the Liberal Arts and Pre-Medical majors, and everyone except the Engineering majors did very well in Political Science classes. Psychology was a problem for those with an English, Pre-Medical, or undeclared major; and Life Science majors did very poorly in Social Science classes at the university.

It should be recognized that this study did not have a means for assessing the reasons for academic difficulties. Whether a student did poorly due to poor preparation at College of San Mateo or because he failed to take such courses at CSM was not explored. The fact is that some students were not doing very well in some classes at the university. A number of alternatives could be pursued -- or at least considered -- to correct this condition, and it was from this frame of reference that the study was designed and the findings were reported.

PART I - CONCLUSIONS AND RECOMMENDATIONS (University Transfers)

1. The difference between the student's grade point average at College of San Mateo and his GPA at the university declined as much as three-tenths of a grade point. Thus, the grades of CSM transfer students at the university are somewhat higher than in the past, while their CSM grades have remained constant or have even declined slightly.

This would suggest that the university transfer students are somewhat more able than in the past, which raises the question: "Why haven't their College of San Mateo grade point averages increased also?"

2. Approximately one student in five will withdraw during his first year of attendance at the university. Although about one-half of the students who transferred to the university were not eligible to enter when they enrolled at College of San Mateo, there were no differences in the rate of withdrawal or the grade point averages at the university between those students who were eligible for entrance and those not eligible for admittance at high school graduation. This study did not provide insight into what could be done by either the university or College of San Mateo to reduce the number of withdrawals. However, one would have to conclude that College of San Mateo is fulfilling one of its prime responsibilities adequately, which is helping students to compensate for past deficiencies so they may enroll in a four-year institution.

3. Students who elect certain majors at the university, such as Chemistry, English, Mathematics, and Philosophy have higher grade point averages at College of San Mateo than students who elect majors in Drama, Economics, Industrial Arts, Natural Resources, and Physical Education. Also, students who are accepted at the Santa Cruz campus tend to have higher grade point averages at CSM than students who transfer to the other campuses of the university. It would be interesting to know what impact, if any, the pass-fail grading system at Santa Cruz had upon the decision of CSM students to attend that campus. And if it did have an impact, what were the implications of pass-fail or credit-no credit grading practices for junior colleges?

4. A number of variables have little affect, if any, upon the student's grade point average at the university. Specifically, men and women performed at the same level; students eligible and those not eligible for transfer to the university upon enrollment at CSM earned approximately the same grade point averages at the university; students who attended other colleges in addition to CSM did as well as students who attended CSM only before transferring to the university; and the number of units completed by a student before transferring did not seem to influence his university grade point average. This study provided very little concrete information on the reasons a student is or is not successful at the university; however, it demonstrates once again (as have hundreds of other studies) that the junior college grade point averages and the students' university grade point averages are very similar and directly related to each other.

5. Students who are <u>not</u> eligible for entrance into the university upon graduation from high school complete more units at College of San Mateo than those who are eligible for transfer. Why this is the case and what advantages, if any, this practice might have were not identified in this study. One could speculate that taking additional units is an expression of lack of self-confidence, which is generally attributed to junior college students (reported in several national studies). If this possibility were supported, it would seem that a goal of building a student's self-confidence while in attendance at CSM should receive additional attention.

6. Approximately 40 percent of the students will pursue a major at the university which is the same or very similar to their major field of study at College of San Mateo. At the same time, the largest proportion of the transfer students elected majors in Social Science, Physical Science, and Foreign Languages at the university; while the Social Sciences, Liberal Arts, Engineering and undeclared majors predominated at College of San Mateo. Essentially, many students have not decided upon a major when they leave junior college.

Thus, the need for general preparation for many transfer students is certainly apparent, and curricula which are narrowly defined for a particular major should be examined carefully at College of San Mateo.

7. Students who major in Fine Arts, Foreign Languages, Life Science, and Mathematics at College of San Mateo usually do "B" or better work at the university in related classes. Students who major in English, Engineering, and Social Science at CSM do "C plus" or "B-" work in related classes at the university; while students who major in Business, Pre-Medical, Physical Science, and Liberal Arts curricula maintain approximately a "C" average in related courses at the university.

There are a number of classes in which students with certain majors do very poor work. However, since this varies considerably from division to division, it would seem more appropriate for each division to examine Table IV in Part I of the findings for specific classes in which students exhibited poor achievement. Many students who transfer to the University of California from the College of San Mateo experience academic difficulties in Chemistry, German, Philosophy, Physical Science, and Psychology. In addition, some students have difficulty in French, Spanish, Mathematics, History, and Social Science. Conversely, students in the following courses at the university have very little difficulty: Art, Speech, Business, Drama, Journalism, and Physical Education. It is suggested, however, that either low or high grade point averages in a particular course should be considered general indicators of adequate or inadequate performance and not as absolute measures of performance. They may warrant discussion of possible modifications in curriculum or instruction, but they cannot be considered, under any circumstances, as mandates for change.

FINDINGS - PART II

State Colleges

During the 1967 fall semester there were 1610 students from the College of San Mateo attending various California State Colleges. Unlike the university transfers reported earlier, this number included all former CSM students regardless of their educational class. Thus, some students had attended a particular state college for more than one semester and their grade point averages were somewhat inflated when compared to the grade point averages of students who had transferred to the university, which excluded continuing scholars. It was noted in Table V that there were no significant differences between the grade point averages of students while attending CSM and their subsequent grade point averages at a state college. The grade point average of all students combined was 2.50 at the state colleges during the fall 1967 semester as opposed to a 2.45 cumulative grade point average at College of San Mateo. It would appear that CSM students achieve approximately the same grade point average at the transfer college as that attained at CSM. At the same time, less than one-half of these students were admissable to the state colleges when they left high school; and they would not have been accepted at a four-year institution if they had not attended College of San Mateo or a junior college.

TABLE V - PERFORMANCE OF CSM TRANSFER STUDENTS AT STATE COLLEGES

State College	Fall Term	Number of Students	Transfer GPA	CSM GPA	GPA Difference
San	1967	637	2.55	2.52	+.03
Francisco	1966	394	2.51	2.49	+.02
State	1965	397	2.50	2.49	+.01
San	1967	302	2.44	2.44	.00
Jose	1966	256	2.23	2.40	-.17
State	1965	232	2.33	2.32	+.01
Chico	1967	145	2.51	2.39	+.19
State	1966	57	2.47	2.32	+.15
College	1965	---			
Humboldt	1967	23	2.42	2.42	.00
State	1966	26	2.80	2.32	+.48
College	1965	16	2.77	2.45	+.32
Fresno	1967	6	2.42	2.39	+.03
State	1966	8	2.16	2.12	+.04
College	1965	9	2.24	2.41	-.17
Long	1967	5	2.47	2.61	-.14
Beach	1966	7	2.55	2.68	-.13
State	1965	3	1.72	2.48	-.76
San	1967	8	2.13	2.27	-.14
Diego	1966	5	2.24	2.18	+.06
State	1965	4	2.43	2.56	-.13

A somewhat more detailed examination of the performance of students at College of San Mateo and the state colleges was provided through Table VI. It shows that three-fourths of the students who earned a grade point average of 2.0 to 2.3 earned the same or a higher grade point average at the state colleges. On the other hand, two-thirds of those earning a 2.4 to 2.7 GPA at College of San Mateo did as well or better at state colleges, one-half of those students with a GPA of 2.8 to 3.2 at CSM did as well or better at state colleges, and one-third of the students with a 3.3 to 4.0 GPA did as well at the state colleges. In fact, only 6.4 percent of the former CSM

students were maintaining less than a 2.0 grade point average, while approximately one-fourth of the former CSM students were earning at least 2.8 grade point average.

TABLE VI - A COMPARISON OF CSM AND STATE COLLEGE GRADE POINT AVERAGES

State College G. P. A.	CSM Grade Point Average 2.0 - 2.3 #	%	2.4 - 2.7 #	%	2.8 - 3.2 #	%	3.3 - 4.0 #	%
Under 2.0	175	22.2%	54	12.7%	15	5.7%	7	5.9%
2.0 - 2.3	247	31.9	99	23.2	41	15.6	9	7.6
2.4 - 2.7	225	29.0	145	34.0	59	22.5	21	17.6
2.8 - 3.2	101	13.0	102	23.9	94	35.9	37	31.1
3.3 - 4.0	30	3.9	26	6.1	53	20.2	45	37.8
Total	775	100%	426	100%	262	100%	119	100%

It should be noted that the data for this portion of the findings were based upon student performance during the fall semester. It has been assumed that the performance of students, in general, would be similar from one semester to the next. This assumption was examined in the study and was verified. In effect, there were no significant differences between the performance of College of San Mateo transfers in the fall semester and their subsequent performance during the spring semester. There was a slight increase in the grade point averages during the spring, but it was not statistically or practically significant.

Unfortunately, most state colleges do not provide information on all their students for comparative purposes. San Jose State, with a very complete reporting system, indicates that the grade point average of under - graduates was 2.49, which is .05 points higher than CSM students, or no practical difference.

Based upon this and the previous comparisons of performance over three years, it was apparent that CSM students perform quite well. However, it was also clear that some students do better than others, and it is in this area that the study sought additional information or insight for possible improvements. That is, what differences, if any, were there between students who perform satisfactorily and those who do not? Moreover, if there were differences, what, if anything, could be done by the college to better prepare all of its transfer students? For example, do students who transfer with a given number of units do better than other students, or do students who majored in one discipline at CSM do better than students who majored in another?

There were twice as many men as there were women who transferred to state colleges, but the proportion of men with a given grade point average was about the same as the women. That is, 29 percent of the men earned between 2.4 and 2.7 grade point average as compared to 26 percent of the women.

It was noted earlier that the grade point average of College of San Mateo transfers to one state college was about the same as their GPA at another. However, it is clear that CSM transfers prefer one state college over another -- there were 42 percent of the CSM transfers at San Francisco State, 36 percent at San Jose, 15 percent at Chico, 3 percent at Humboldt, and 8 percent at all other state colleges combined. It was also noted that Chico, San Francisco, and San Jose were attracting a higher proportion of women students than other state colleges; while Long Beach, San Diego, Humboldt, and Fresno had a higher proportion of men from CSM in attendance than the other state colleges.

The possibility that students who elected a given state college might have a higher or lower grade point average at College of San Mateo than those students who selected another state college was considered through Table VII. This table shows that students attending Long Beach and San Francisco tended to have higher grade point averages at CSM than other students. Conversely, a higher proportion of the Chico State students had "C" averages at CSM than students who transferred to other state colleges.

TABLE VII - CSM GRADE POINT AVERAGES OF STUDENTS AT STATE COLLEGES

State College	CSM Grade Point Average 2.0 - 2.3 #	%	2.4 - 2.7 #	%	2.8 - 3.2 #	%	3.3 - 4.0 #	%	Total Number
San Francisco	286	43.8%	186	28.5%	123	18.8%	58	8.9%	653
San Jose	302	54.0	134	24.0	82	14.7	41	7.3	559
Chico	145	62.5	56	24.1	29	12.5	2	.9	232
Humboldt	23	56.1	12	29.3	3	7.3	3	7.3	41
Fresno	6	54.5	4	36.4	--	--	1	9.1	11
Long Beach	5	33.3	4	26.7	5	33.3	1	6.7	15
San Diego	8	57.1	6	42.9	--	--	--	--	14
All Others	36	52.8	8	11.8	12	17.7	12	17.7	17

It was found that the proportion of new undergraduates and continuing students who had earned a particular grade point average at CSM was the same. Specifically, 47 percent of the new undergraduates had a GPA of 2.0 - 2.3 as did 51 percent of the continuing students. Thus, new students had about the same grade point average as did the continuing students. This would suggest that whether a student continues his education or not at a state college, his grade point average at College of San Mateo cannot be considered as a reason. Further refinement of this point did show that freshman and sophomore students at transfer colleges had earned higher grade point averages at College of San Mateo than junior or seniors. Also, two-thirds of the graduate students had maintained a 2.5 or higher grade point average at College of San Mateo. It was alos found that 42 percent of the lower division students had a GPA of 2.0 - 2.3 at CSM as opposed to 50 percent of the upper division students. Thus, the probability of a student being admitted into lower division courses increased as his GPA at CSM increased. This seemed to indicate a student's cumulative GPA at CSM when he transferred was the best indicator of his state college GPA, even if he transferred after one semester of junior college work.

Another issue considered at this point was whether a student's unit load at a state college was a function of his junior college grade point average. Such was the case, as 75 percent of the students with a GPA of 2.0 - 2.3 at College of San Mateo carried 12 or more units, and 61 percent of the students with 3.3 - 4.0 GPA at CSM carried 12 or more units. Thus, units attempted at a state college decreased as the student's GPA at CSM increased. It was also found that students who transferred to San Francisco State attempted fewer units than students who attended any of the other state colleges, which is probably related to the higher GPA of San Francisco State transfers from College of San Mateo. This is, however, an internal problem at San Francisco State and not a function of the student's performance at College of San Mateo.

A corollary was whether students transferring to a particular state college had completed more units at College of San Mateo than students who transferred to another state college. Students selecting San Francisco State tended to complete fewer units at CSM than students attending other state colleges, while San Jose transfers completed more units than other state college transfer students. Other than this, however, the number of units completed at CSM did not seem to be related to the student's choice of state college. Table VIII provides a possible explanation for this by pointing out the considerable mobility of students in attending several colleges, and it also suggests a possible problem some CSM students face in transferring. There were 120 students who had completed less than 15 units at CSM and yet, their class level was sophomore or higher. Obviously, they could not have achieved this level unless they had taken additional units at another college. An investigation of records at CSM reveal that 422 of all the students studied had attended another college prior to enrolling at CSM, and at least 224 attended another college after leaving CSM but before enrolling at a state college. Thus, it would appear that one-third of the CSM transfer students have attended two or more colleges before they enrolled at the state college. In effect, the performance of one in three students who transfer to a state college from CSM was influenced by achievements at a college other than College of San Mateo.

TABLE VIII - STUDENT MOBILITY AS REFLECTED BY THE NUMBER OF UNITS A STUDENT COMPLETED AT CSM AND HIS CLASS LEVEL AT STATE COLLEGES

Units Completed at CSM	Class Level					
	Freshman	Sophomore	Junior	Senior	Graduate	Total
15 or less	19	17	47	54	2	139
16 - 30	4	12	19	17	2	54
31 - 45	2	16	21	11	2	52
46 - 59	1	11	56	36	1	105
60 - 69	25	13	352	337	21	748
70 or more	9	5	187	279	16	496

The differences in transfer grade point averages between students who had and who had not attended another college prior to coming to CSM was considered, but no practical differences were found. For example, 26 percent of those who had attended another college earned a GPA of 2.4 - 2.7; while 29 percent of those who attended only CSM earned the same grade point average, 24 percent of those who attended another college before they enrolled at CSM earned a GPA between 2.8 and 3.2, as did 20 percent of those who attended CSM only. The students' grade point averages following enrollment at another college after leaving CSM, however, were not available; and the influence of this could not be assessed.

Table VIII also suggests a problem CSM students were encountering when they transferred. That is, approximately 275 students had completed more units at CSM than they needed to attain their current class standing at the state college. In some instances this may represent enrichment courses, courses the student had to take or wanted to take but were not transferable, or in some cases they represent courses repeated to raise the student's GPA.

Some of these excess units were probably the result of taking courses they did not need. At the other end of this spectrum are the students who failed to take necessary courses before transferring, resulting in a lower class standing and prolongment of their graduation from the state college. This problem is not unknown to the counseling process, but perhaps it would warrant additional attention at College of San Mateo.

It should be noted that students who have completed 45 or fewer units at CSM are as likely to maintain a grade point average above 2.0 as under 2.0 at the state college. There were 50 percent more students who completed 45 to 79 units who maintained a GPA of 2.0 or better than there were who maintained less than 2.0 GPA. It would seem that students who transferred with a junior standing were the most likely to maintain at least a "C" average at the state colleges.

The question of whether students who transferred immediately after completing their work at CSM or whether those who delayed their enrollment at a state college earned better grade point averages was considered in Table IX. It was found that approximately 22 percent of the students who enrolled the first or second semester after leaving CSM earned less than 2.0 GPA as compared to approximately 13 percent of those who delayed more than two terms. Those who waited three to four semesters before enrolling at a state college were just as likely to have less than a 2.0 GPA as they were to have over 2.0 GPA. However, students who waited five or more terms tended to have higher grade point averages than students who enrolled sooner. The following table indicates clearly the difficulty of establishing a cause and effect relationship between a student's attendance at CSM and his GPA at a four-year college. Perhaps a student's GPA at a state college was due to the impact of his junior college experience, but one could also make a case for increased maturity having helped the student achieve a given GPA. Obviously, a student's grade point average cannot be described as a simple case of concomitant variation.

TABLE IX - THE PASSAGE OF TIME AS A FUNTION OF STATE COLLEGE GRADE POINT AVERAGE

Number of Terms Since Attendance at C.S.M.	Transfer Grade Point Average: Under 2.0 #	Under 2.0 %	2.0 - 2.3 #	2.0 - 2.3 %	2.4 - 2.7 #	2.4 - 2.7 %	2.8 - 3.2 #	2.8 - 3.2 %	3.3-4.0 #	3.3-4.0 %	Total
One	58	23.2	55	22.0	73	29.2	39	15.6	25	10.0	250
Two	65	21.2	78	25.4	81	26.4	59	19.2	24	7.8	307
Three	55	15.6	85	24.1	94	26.6	85	24.1	34	9.6	353
Four	39	12.6	81	26.2	101	32.7	60	19.4	28	9.1	309
Five	29	14.5	47	23.5	50	25.0	51	25.5	23	11.5	200
Six or More	24	13.3	47	29.3	52	28.9	39	21.7	18	10.0	180

The third major objective of this portion of the findings concerned the behavior of students in specific majors and classes. Unfortunately, the student's major was reported only by San Francisco, San Jose, and Humboldt State Colleges. Thus, questions assessed in terms of major were limited to information provided by these state colleges, representing approximately 75 percent of the transfer students from College of San Mateo. The most popular majors at San Francisco State were Business, Social Science, and English; at San Jose they were Business, Social Science, and Engineering; and Business and Natural Resources majors predominated at Humboldt. Majors in Aeronautics, Art, Chemistry, Engineering, Industrial Arts, Math, Physical Education, and Physical Science were preferred at San Jose State. Majors in Drama and Speech, English, History, Political Science, and Psychology were preferred at San Francisco State. Students who majored in Biological Science and Natural Resources preferred to attend Humboldt State.

The fact that students change their major two, three, or more times in college is well documented. Table X shows that transfer students from College of San Mateo are no exception to this general rule. Specifically, 56 percent of the CSM students who had selected a major in junior college retained the same or a very similar major in the transfer college. However, if one included undecided majors at CSM, the percentage who retained their junior college major at a state college dropped to 37 percent.

TABLE X - A COMPARISON OF MAJORS AT COLLEGE OF SAN MATEO AND SUBSEQUENT MAJORS AT STATE COLLEGES

Transfer College Major	Number of Students in Each Major at CSM														
	Fine Arts	Busi-ness	English	Foreign Language	PE & Health	Pre-Profes.	Liberal Arts	Life Science	Engi-neering	Mathe-matics	Physical Science	Vocational Technical	Social Science	Not Declared	TOTAL
Aero.		2					2		18					1	23
Art	35			1	1	2	5	2	3		2	1	8	21	81
Bio. Science		1	1	1		14	2	20	1	2	1	3	7	7	60
Business	2	125			3	6	13	6	10	2		14	16	46	243
Chemistry					1	2		1	3		8			4	19
Drama/Speech	9	3		1		1	6					9	6	10	45
Economics		1								1		2	8	4	16
Education				2			1		1				4	1	9
Engineering		4	1			1	2		38	1		8		14	69
English	2	5	1	30		2	8	1	2	1		1	25	22	100
Foreign Language	1	2	1	20		2	3				1	2	9	10	51
History	1	1		1	1	3	4	1	1			2	34	19	67
Home Econ.		1				1						9	7	4	22
Ind. Arts	2	2					4		6	1		10	4	8	37
Journalism		3	7			1	1						1	2	15
Mathematics						1			5	10	2	1	1	3	23
Music	21						1	1					2	1	26
Natural Res.						2	1	3	1				2		9
Nursing					1	3	2						1		7
Philosophy		2				1	2	1		1			1	5	13
PE & Health	1	1			14	3	5	3	1				4	11	42
Physical Sci.						2	2	3	5	2	8		1	3	26
Pol. Science		2		1	1	5	4						22	5	40
Psychology	1	2		1	1	6	8	1	3	1	1	1	39	12	77
Pre-Medical		1				7	1	1	2	1		1	1	6	21
Soc. Science	3	10	17	1	15	10	23	5	1	1	2	4	76	30	198
TOTAL	78	168	28	59	37	75	100	48	100	24	25	68	279	249	1338

At the same time, Table X shows that the number of radical changes are not common. For example, out of the 100 students who minored in Engineering at College of San Mateo, 28 switched to majors at a state college which require course work in disciplines not normally required of engineers. In a like manner, out of the 23 students who majored in Aeronautics at the state colleges, only five had junior college majors which did not emphasize background courses needed for aeronautics. Generally, it was found that 70 percent or more of the students who majored in the Fine Arts, Business, Engineering, Mathematics, and Physical Science at CSM majored in the same or a closely related field at a state college; as did 50 to 60 percent of the CSM students who majored in Social Science, Vocational-Technical programs, Life Science, Foreign Language, and Liberal Arts. However, 40 percent or less of the students who majored in Physical Education, Pre-Professional programs, and English remained in the same or a related major at a state college. Although the switching of majors is relatively common, it would seem that the majority of the transfers from CSM pursue a major at the state colleges which builds upon their course work at College of San Mateo.

Based upon this rationale, the academic achievement at state colleges was examined in relation to students with particular majors at CSM. Table XI shows that students who had majored in Social Science, English, Fine Arts, Liberal Arts, and Physical Science achieved a higher proportion of "B" or better averages than did other students. Conversely, the Pre-Law, Pre-Med, Vocational-Technical, and Business majors at CSM maintained a higher proportion of averages below "C" than did students from other majors.

TABLE XI - ACADEMIC ACHIEVEMENT AT A STATE COLLEGE OF STUDENTS WITH SELECTED MAJORS AT CSM

CSM Major	Below "C" Average		"B" Average or Above	
Fine Arts	14	16.3%	27	31.4%
Business	42	20.6%	50	24.5%
English	7	10.9%	23	35.9%
Engineering	25	18.2%	35	24.6%
Health & PE	4	8.9%	16	11.6%
Pre-Law	8	34.8%	6	26.0%
Pre-Medicine	19	23.5%	16	19.7%
Liberal Arts	19	15.2%	39	31.2%
Life Science	10	17.9%	14	25.0%
Mathematics	5	18.5%	6	22.5%
Physical Science	9	16.6%	16	29.7%
Social Science	46	13.6%	123	36.3%
Vocational-Technical	15	23.1%	16	24.5%
Unclassified	52	17.3%	92	30.7%

These major classifications, however, are fairly broad and actually contain a number of majors. The data is refined somewhat in terms of specific majors, and the grade point averages of students with each such major were calculated. This information was presented in Table XII. The grade point averages of students who majored at CSM in Spanish, Dental Assisting, Pre-Nursing, Forestry, Architecture, Aeronautical Engineering, Electrical and Mechanical Engineering, Geology, Economics, Philosophy, Police Science, Drafting, and Technical Illustration were below 2.3 grade point average. However, Cosmetology and Police Science majors only earned less than a 2.0 GPA. Students majoring in French and Geography had a GPA of 2.8 or better in their state college courses. Great care should be given to the attachment of practical significance to any major and its corresponding grade point average, however, when the number of students who elected that major were less than ten in number. That is, in some cases there were too

few students involved to permit generalization regarding a grade point average of a specific major under examination.

TABLE XII - THE STATE COLLEGE GPA OF STUDENTS WITH SELECTED CSM MAJORS

CSM Major	#	GPA
Fine Arts		
Art	46	2.47
Drama & Speech	12	2.43
Music	26	2.51
Business		
Bus. Admin.	190	2.39
Other Business	11	2.74
English		
English	54	2.64
Journalism	9	2.78
Foreign Language		
French	19	2.87
Spanish	4	2.23
Health Occupations		
Dental Assisting	3	2.07
Pre-Dental	18	2.61
Pre-Medical	29	2.34
Pre-Nursing	16	2.24
Pre-Pharmacy	7	2.73
Liberal Arts	125	2.49
Life Science		
Biology	36	2.56
Forestry	12	2.12
Engineering		
Architecture	11	2.29
Electrical Engr.	10	2.24
Mechanical "	5	2.28
General "	54	2.54
Civil Engr.	5	2.64
Aeronautical "	24	2.18
Mathematics	25	2.51
Physical Education	41	2.64
Pre-Law	22	2.43
Physical Science		
Chemistry	13	2.44
Geology	5	2.10
Physics	5	2.40
Social Science		
Economics	5	2.16
Education	3	2.38
Geography	4	3.70
History	49	2.52
Philosophy	3	2.10
Political Sci.	36	2.66
Psychology	48	2.63
Sociology	4	2.48
Social Science	38	2.30
Social Work	7	2.46
Vocational-Technical		
Cosmetology	4	1.50
Drafting & Technical Ill.	6	2.20
Electronics	28	2.46
Home Econ.	21	2.51
Machine Tech.	7	2.41
Police Science	14	1.87
Telecomm.	11	2.39
Unclassified	308	2.43

Table XIII was designed to provide a comparison to Table XI. If a given major in which more than one student in five earned a GPA of below 2.0, the students in that major were considered to be achieving poorly.

TABLE XIII - STATE COLLEGE GRADES OF STUDENTS WITH SELECTED STATE COLLEGE MAJORS

State College Major	Below "C" Average		"B" Average or Above		Total
	#	%	#	%	
Aeronautics	8	34.8%	3	13.0%	23
Art	12	15.2	29	36.7	79
Biological Science	9	15.3	19	32.2	59
Business	56	22.9	51	20.9	244
Chemistry	4	22.2	4	22.2	18
Drama & Speech	3	6.7	17	27.8	45
Economics	4	25.0	7	43.8	16
Education	--	--	5	55.5	9
Engineering	13	18.8	13	18.8	69
English	15	15.2	33	33.3	99
Foreign Language	4	7.8	23	45.1	51
Geography	1	10.0	5	50.0	10
Geology	2	22.7	1	11.1	9
History	6	9.0	21	31.4	67
Home Economics	3	13.0	9	29.2	23
Industrial Arts	4	10.8	15	40.5	37
Journalism	3	20.0	4	26.7	15
Law Enforcement	1	11.1	--	--	9
Mathematics	4	17.4	5	21.7	23
Music	3	11.5	9	34.6	26
Natural Resources	1	11.1	2	22.2	9
Nursing	2	28.6	1	14.3	7
Philosophy	5	33.3	5	33.3	15
PE and Health	7	16.3	13	30.2	43
Physical Science	4	23.5	6	35.3	17
Political Science	4	9.5	23	52.4	42
Psychology	10	13.0	30	39.0	77
Pre-Medical	4	19.0	5	23.8	21
Social Science	31	17.8	55	31.6	174

Based on this criterion, Table XIII shows that students majoring in Aeronautics, Business, Chemistry, Economics, Geology, Nursing, Philosophy, and Physical Science were achieving poorly. At the same time, students majoring in Education, Political Science, and Geography were doing very well. This is not to suggest, as was pointed out earlier, that the student's performance at College of San Mateo caused good or bad grades but simply that some students do not perform as well as others, and some attention could be given to a discussion of what, if anything, might be done to rectify the situation.

A major question raised early in this study regarding the student's preparation for transfer at CSM has been partially assessed at this point. The next logical question was: "How well did students with particular majors at CSM perform in state colleges in classes ralated to that major?" The information was presented in Table XIV, which shows the student's major at CSM, state college classes, and the grade point average in those classes. In addition, the number of letter grades used to calculate the GPA was shown in parentheses so the reader could assess the practical significance of a particular grade point average. For example, students who majored in the Fine Arts at CSM maintained a GPA of 2.6 or above in Art, Drama, Speech and Music classes. At first glance it would seem they did quite well in Engineering; but only one student took one class, which would not support a conclusion that his performance was typical of all CSM students with Fine Arts majors. It was clear, however, that students who majored in Fine Arts at CSM were encountering problems in English, History, and Social Science. Rather than reiterating the courses in which students performed well or poorly, the reader is encouraged to follow the example outlined above for students in the major(s) of interest to the reader.

TABLE XIV - GRADE POINT AVERAGES IN STATE COLLEGE CLASSES
OF STUDENTS WITH SELECTED CSM MAJORS

College of San Mateo Majors

State College Classes	Fine Arts	Busi-ness	English	Foreign Languages	Health & PE	Law	Medicine	Liberal Arts	Life Science	Engi-neering	Mathe-matics	Physical Science	Social Science	Voc./ Tech.	
ART	121	6	17	3	6	5	67	30	9	27	3	2	56	23	No.
	2.6	2.7	2.5	2.7	2.7	2.6	2.9	2.7	2.3	2.6	2.0	3.0	2.6	2.3	GPA
BIOLOGICAL SCIENCE	7	16	2	2	13	1	53	17	60	26	7	12	40	5	
	1.9	1.7	2.5	2.0	2.0	3.0	2.3	2.1	2.5	2.3	2.7	2.7	2.4	1.4	
BUSINESS	1	452	3	3	9	24	11	42	16	71	6	5	62	24	
	1.0	2.3	2.3	2.3	2.1	1.9	2.4	2.4	2.6	2.2	2.3	3.0	2.2	2.2	
CHEMISTRY	0	5	2	0	0	0	20	3	13	21	1	20	9	9	
	--	1.8	2.5	--	--	--	2.1	1.7	1.8	2.4	2.0	2.4	2.2	1.8	
DRAMA AND SPEECH	47	11	16	4	7	1	5	36	3	11	5	1	51	12	
	2.7	2.7	2.6	2.3	2.1	3.0	2.6	2.7	2.7	2.4	2.2	2.0	2.6	2.7	
ECONOMICS	3	40	5	1	2	3	1	15	5	17	0	1	37	3	
	1.7	2.3	2.0	3.0	2.5	2.3	1.0	2.5	2.6	2.2	--	3.0	2.4	1.8	
EDUCATION	8	6	6	8	14	0	2	14	0	6	0	2	50	2	
	2.6	3.0	3.0	2.8	2.7	---	3.0	2.6	---	2.7	---	3.0	2.8	3.0	
ENGINEERING	1	7	6	0	1	0	1	1	1	117	1	3	8	5	
	3.0	2.3	2.2	---	3.0	---	3.0	3.0	2.0	2.5	3.0	2.0	2.9	2.0	
ENGLISH	21	41	91	3	7	8	4	44	41	31	4	3	108	13	
	1.8	1.5	1.7	1.3	1.6	1.8	1.8	1.4	1.8	1.9	1.3	2.3	1.6	1.5	
FRENCH	7	10	7	5	4	4	4	8	11	1	3	2	13	2	
	2.9	2.9	2.7	2.0	2.3	2.0	2.5	2.5	3.0	2.0	3.0	2.0	2.8	3.0	
GERMAN	1	4	2	7	0	0	5	6	2	0	3	1	8	3	No.
	1.0	2.5	2.5	2.9	---	---	1.8	2.7	2.5	---	2.3	3.0	2.9	2.7	GPA
SPANISH	0	7	3	27	0	0	3	7	0	3	2	1	21	0	
	---	3.0	2.0	2.6	---	---	3.0	2.9	---	1.7	2.0	3.0	2.4	---	
OTHER LANGUAGES	0	1	0	2	0	0	4	2	0	1	0	0	6	1	
	---	3.0	---	2.5	---	---	2.5	2.5	---	3.0	---	---	2.8	2.0	
HISTORY	13	32	22	3	6	12	18	41	16	9	1	1	185	13	No.
	1.5	2.1	2.5	2.7	2.2	2.4	2.0	2.4	2.1	2.2	1.0	3.0	2.4	1.9	GPA

TABLE XIV - Continued
GRADE POINT AVERAGES IN STATE COLLEGE CLASSES
OF STUDENTS WITH SELECTED CSM MAJORS

State College Classes	College of San Mateo Majors: Fine Arts	Business	English	Foreign Languages	Health & PE	Law	Medicine	Liberal Arts	Life Science	Engineering	Mathematics	Physical Science	Social Science	Voc./Tech.	
HOME ECONOMICS	1 2.0	1 2.0	1 3.0	0 ---	0 ---	1 2.0	5 2.4	0 ---	1 3.0	0 ---	0 ---	0 ---	28 2.1	25 2.7	No. GPA
INDUSTRIAL ARTS	4 2.3	1 3.0	0 ---	0 ---	0 ---	0 ---	0 ---	12 2.7	4 2.9	20 2.8	0 ---	1 3.0	5 2.6	14 2.5	
JOURNALISM	0 ---	4 2.8	11 2.8	1 2.0	0 ---	0 ---	5 2.4	0 ---	0 ---	0 ---	0 ---	0 ---	6 2.8	1 2.0	
LAW ENFORCEMENT	0 ---	3 2.3	0 ---	0 ---	0 ---	0 ---	0 ---	4 2.3	0 ---	0 ---	0 ---	0 ---	5 2.6	7 3.0	
MATHEMATICS	6 2.2	37 2.1	2 1.5	0 ---	1 1.0	3 2.0	14 2.1	9 2.3	3 1.7	37 2.2	15 2.3	13 2.1	30 2.3	7 2.4	
MUSIC	129 2.6	15 2.6	2 3.0	7 2.3	1 3.0	0 ---	8 2.5	27 2.6	13 2.8	5 2.6	2 2.5	4 2.0	31 2.7	7 2.0	
NATURAL RESOURCES	0 ---	0 ---	0 ---	0 ---	10 2.0	0 ---	1 3.0	3 2.7	13 2.2	5 2.4	0 ---	0 ---	5 2.8	0 ---	
NURSING	0 ---	0 ---	0 ---	0 ---	1 1.0	0 ---	6 2.3	1 1.0	0 ---	0 ---	0 ---	0 ---	0 ---	0 ---	
PHILOSOPHY	5 1.8	19 2.6	3 2.7	0 ---	0 ---	3 1.7	4 2.3	16 2.3	10 2.3	18 2.1	10 2.4	8 2.4	28 2.5	5 2.8	
PE & HEALTH	26 2.6	42 2.7	7 2.7	9 3.0	173 2.7	1 2.8	43 2.8	53 2.6	15 2.8	35 2.6	5 2.8	4 3.0	41 2.7	34 2.6	
PHYSICAL SCIENCE	12 1.9	21 2.3	6 2.5	2 1.5	41 2.5	2 1.0	6 1.8	9 2.4	10 2.4	32 2.4	0 ---	16 2.1	23 2.2	7 2.3	
POLITICAL SCIENCE	2 2.0	28 2.4	4 3.0	1 2.0	4 2.5	10 2.6	9 2.3	14 2.6	4 2.3	10 2.4	1 2.0	0 ---	92 2.6	17 2.2	
PSYCHOLOGY	10 2.4	23 2.4	7 3.0	2 3.0	14 2.7	1 3.0	28 2.6	43 2.6	10 2.5	15 2.6	5 2.2	6 2.3	168 2.6	17 2.2	
SOCIAL SCIENCE	23 2.3	58 2.7	22 2.6	3 2.3	12 2.4	4 2.5	44 2.2	73 2.5	17 2.4	26 2.6	9 2.4	4 2.8	191 2.4	38 2.2	No. GPA

Problem courses for College of San Mateo Business majors included the Biological Sciences and English, and English majors had problems in English. Foreign Language majors did not do well in English, Physical Education majors had difficulty in English classes, Pre-Law majors encountered problems in Business and English, Liberal Arts majors performed poorly in English, Life Science majors encountered problems in Chemistry and English, Social Science majors did not achieve good grades in English, and Vocational majors had problems in English and History. One would have to conclude that English was a problem for CSM students at the state colleges regardless of their major field at College of San Mateo. In fact, it would seem that a number of students were encountering difficulties in courses in Chemistry, English, History, Mathematics, and Physical Science. There were several courses in which most students did quite well, however, such as Art, Drama and Speech, Education, French, Industrial Arts, Journalism, Physical Education, and Health. Additional inspection of Table XIV by individual divisions will also show courses that may require more attention at College of San Mateo. For example, a grade point average of 2.1 in Mathematics may not be deemed adequate by the Physical Science Division for students who majored in the Physical Sciences. The point is that each division and the instructors in that division will have to judge the adequacy of the performance of its students, and then determine what can be done or should be done about the academic performance of its students in state colleges.

PART II - CONCLUSIONS AND RECOMMENDATIONS (State College Transfers)

1. Students from the College of San Mateo who transfer to a state college will maintain practically the same cumulative grade point average at both institutions. Specifically, three out of four students will earn the same or a higher grade point average while attending a state college as they did at College of San Mateo. Moreover, students from CSM attending one specific state college will do as well as those attending another state college. However, more than one-half of the 1610 students in

this study were ineligible for admission to a state college when they left high school. Based upon the findings of this study as well as those of the past several years, it would seem that only perfunctory attention should be given to future grade point average comparisons; but considerable attention should be given to the elements of a student's transfer grade point average. In this way the College of San Mateo could identify specific subject areas to which additional attention needs to be focused.

2. A grade point average at a state college cannot be related directly to a student's sex, status as a new or continuing student, length of time in attendance at CSM, or to attendance at a college other than CSM prior to transferring. Instead, it would seem that such variables are related to performance only to the extent that they accurately reflect some intervening variable, such as the degree of motivation or degree of involvement in obtaining an education; knowledge of the techniques used to obtain good grades, etc. Such a conclusion would seem to be supported by the findings: as the student's grade point average at CSM increased the unit load at a state college decreased, as the time between leaving CSM and subsequently enrolling in a state college increased the student's grade point average increased, students who transfer with junior standing are more likely to maintain a GPA of 2.0 or better than those who transfer with less units. In fact, it would appear that the student's maturity and corresponding acceptance of responsibility could be logically supported as variables having a great affect on the student's grade point average. Thus, attempts to prepare students better for acceptable academic performance at a state college must give as much attention to the non-cognitive factors as to the acquisition and use of knowledge. In effect, the creation of an atmosphere that promotes learning would seem to deserve as much attention as the dissemination of knowledge.

3. Former students from the College of San Mateo prefer San Francisco and San Jose over the other state colleges. Proximity plays an important role in the selection of a state college it would appear. San Jose retains an attraction for Science majors among CSM students, because students majoring in Engineering, Math, and Physical Science select that institution more often than they do other state colleges. However, those majoring in Biological Science and Natural Resources prefer Humboldt, and those majoring in the Humanities predominate at San Francisco. Apparently the university image being projected by the state colleges is not perceived or accepted by students or those who advise the students.

4. There is a considerable degree of mobility among CSM transfer students. In fact, one in three have attended a college other than CSM before they transfer. Moreover, one in five will attend another college after leaving CSM but before they enroll at a state college. These findings and the recognition that many factors outside the influence of CSM have a profound affect on a student's behavior suggest that the impact of a student's experience at CSM cannot be isolated in a descriptive study. Thus, satisfactory or unsatisfactory performance by a student while attending a state college cannot be attributed solely to his experiences while attending a given junior college.

5. Approximately one student in five will complete more units at College of San Mateo than are necessary to obtain a junior standing upon transfer to a state college. For some students this may be appropriate as well as necessary. In other instances excess units may represent unnecessary course work or errors in selection of courses. Thus, it would appear that some attention should be given to the matter of excess units; if it is a problem, what action should be taken to effect a solution? Also, some students may have to prolong their state college enrollment because they could not transfer enough of their junior college

units. Essentially, students at both ends of this spectrum may have encountered a problem requiring attention by the College of San Mateo.

6. Only one student in two will maintain the same major at a state college as was pursued at the junior college. Moreover, one student in four will not have declared a junior college major upon transferring. However, in the majority of the cases changes in majors are made to a field related to the original major. That is, very few dramatic changes take place. In most cases the student will build upon his junior college courses when enrolling at a state college. This does suggest, however, that a reasonably broad preparation is required at the College of San Mateo, and narrowly restricted curriculums will not meet the needs of many junior college students. It would appear that constant re-examination of the various curricula would be appropriate to insure that this does not occur.

7. Although the performance of CSM transfers as a whole is quite satisfactory, the performance of some students in several majors could be improved. What is or is not satisfactory, however, depends on the criteria each division or department considers reasonable. Table XI and Table XII present specific data that instructors can examine, and then discuss what action, if any, seems appropriate. In any event, it seems to the researcher that some students who majored in Pre-Law, Pre-Nursing, Forestry, Aeronautical and Electrical Engineering, Business, and some of the Vocational-Technical curricula were encountering academic difficulties. Students who majored in Chemistry, Economics, Geology, Nursing, Philosophy, and Physics would seem to be experiencing difficulties by the following criterion: if 20% or more of all the students from a given major are earning less than 2.0 grade point average, then the performance of such students will be considered unsatisfactory. The instructors

involved should review the tables based on the criteria they consider reasonable, then discuss possible actions to take if they feel there is a problem confronting their students.

8. Transfer students from the College of San Mateo encounter more academic difficulty in English at the state colleges than in any other subject. This was found to be the case even when the student's major at CSM was English. There were other courses that presented problems for many CSM students, and classes that were problems for students from certain majors. It is suggested that each division examine Table XIV in terms of the majors it offers, and then consider the grade point averages of the students who pursued that major and their performance in each of the classes that seem relevant to that major. For example, is the performance of a Business major adequate in Chemistry, English, History, or Math? Why do so many students experience difficulties in Chemistry? What, if anything, should be or could be done to correct this? It would seem that the study provides several points for profitable discussion.